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ABSTRACT

This study investigated the possibility that the effectiveness of an educational program for an individual student is dependent on his or her background. A 101-item biographical data questionnaire was administered to the parents of 43 Follow Through and 38 non-Follow Through students who had just finished the third grade. The biographical questionnaire was factor analyzed and 22 items representing five areas were used in a subgrouping analysis. The five areas were: (1) parental background and activities; (2) child's activities the previous summer; (3) home environment; (4) socioeconomic status; and (5) child's health and activities. A hierarchical grouping procedure was used to form homogeneoue groups of students on the basis of their biographical inventory profiles. The final group classification contained 76 students distributed among nine subgroups. Analysis of variance was performed on the subtests of the Metropolitan Readiness Test (MRT) to determine if there were differences in test performance among subgroups when they started first grade. Students in three subgroups had higher test performance on both MRT subtests and the total test than students in the remaining six subgroups. Another analysis of variance was performed on the subtest of the California Achievement Test (CAT) Level 2, administered at the beginning of the third grade. There were no significant differences among subgroups on either CAT subtest performance or total test performance. The complete biographical inventory is appended. (Author/CP)

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AN INVESTIGATION OF THE EFFECTIVENESS OF TWO EDUCATIONAL PROGRAMS IN VIEW OF THE STUDENTS' PREVIOUS EXPERIENCES

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*Prepared while the author was a doctoral student at the University of Georgia

CHAPTER I

INTRODUCTION

One of the basic goals of psychology is to better understand and predict the behavior of people in normal day-to-day activities. Toward this end, over the last several years, a considerable effort has been devoted to the development and testing of a new predictive model. The goal has been to understand why some people can better profit from opportunities than can others. The feeling is that events and experiences of the past, especially the recent past, influence people's behavior so that some are able to take advantage of specific opportunities whereas others are not.

The success with this model has been promising during the preliminary applications, although most of the studies have involved college-level students and employees in an industrial setting. In these situations it has been found that information concerning people's backgrounds has helped predict their behavior in college and on the job. These successful applications of the biographical data model have led to the investigation of the usefulness of student background information in predicting how elemen-

tary school children will react to different educational situations.

Ten years ago the Follow Through program was established by the Economic Opportunity Act (Public Law 90-22, 1967, Section 222 [a]) to provide compensatory education for children of low-income families. The program was to be administered by the United States Office of Education. Several educational models were developed and implemented by educational experts throughout the United States. All of the models provided an educational experience that was different from the traditional classroom (U.S. Office of Education 1969/70, 1970/71). Evaluation of the program was required at the national level as well as being the responsibility of each individual model. The results of the numerous evaluation projects that have been completed vary throughout the range of indicating that the program is successful to saying that it is not effective. It may be that the Follow Through program is more effective for some types of students than it is for others.

The Mathemagenic Activities program is the educational model for Follow Through that was developed at the University of Georgia. As explained by Smock, Graham, Silverman, and Huberty (1975), MAP is closely related to the philosophical-theoretical position of Piaget and is based on the following assumptions:

1. A child's intelectual development moves through invariant structural changes which allows the child to adapt to his physical and social environment as it becomes more complex.

2. An appropriate discrepancy between previously acquired knowledge and environmental demands is necessary for developmental-intellectual change.

3. Knowledge acquisition comes from coordinated behavioral and mental actions on elements of the physical and social environment.

4. Environmental-learning conditions should provide for constructive regulation of behavioral and mental actions.

Using data from the MAP model of Follow Through, it is the purpose of this study to investigate the possibility that the effectiveness of an educational program for an individual student is dependent on his previous experiences. It is fairly general knowledge that a child's background experiences affect his performance in school. Specific aspects of a child's home life provide clues as to how a child will adapt to certain learning situations. There is a good possibility that children with different background experiences will react differently to the same classroom learning experience. If these differences in background experiences can be determined, it may be possible to match the children with the most

effective educational experience for their background.

A biographical data questionnaire is used to gather background information about the students from the parents, and then the students are separated into homogeneous subgroups according to their background experiences. An analysis is then done on test scores to see if there are performance differences among children with different background experiences. If differences in test performance do exist, then knowing a child's background experience should help one predict which child will do best in which learning situation.

CHAPTER 2

REVIEW OF THE LITERATURE

Every child in the United States today has the opportunity to attend school and to receive an education. As stated by Armor (1972), the main goals of schooling are: (1) to teach basic cognitive skills, (2) to provide training for future occupations, (3) to impart attitudes which encourage a student to become an active citizen, and (4) to provide for a student's physical and psychological welfare. How well a school attains these goals is not solely dependent on the school system's characteristics. The environmental and genetic background of its students also influence the ability of a school to achieve the above listed goals.

Environmental Influence

A child does not start his education on the first day of school. Instead, he brings to school a given set of characteristics which have been molded from his social environment. This environment consists of the life style of his immediate family, the life style of his neighborhood and community, the life style of his closest peer group, and the cultural values of his

geographic region. All of these areas are believed to influence a student's ability to learn as well as his motivation to learn.

Armor (1972) has developed a Model of Aggregate Educational Processes which describes how the various environmental forces influence both the school's characteristics and the student's characteristics. In effect, his model illustrates that everything is interrelated and that regional and community factors influence both the school's and the student's input factors which then directly impact on a student's final achievement. He analyzed the U.S.O.E. data to determine whether student background variables were more predictive of school achievement than were school characteristics. His analysis showed that for the nation as a whole the achievement of sixth-grade students is better predicted by student background variables than by characteristics of the school.

Webster (1966) states that "any person when confronted with a problem begins to search his storehouse of accumulated experiences for strategies, related ideas, and possible solutions" (p. 478). This is exactly what students do when they are expected to solve problems in school, and one of the reasons why background variables are able to predict school achievement. Students look back on their prior experiences, however limited, and attempt to use them to arrive at a solution to the problem.

According to Webster (1966) prior experiences influence the learning process in the following ways:

1. It colors the values a person attributes to ideas, people, and things.

2. It colors a person's perception of reality and to a large extent determines his motivation and goals for the future.

3. New learning experiences which are foreign to a person's prior experiences will tend to lower his level of interest, motivation, and learning.

4. New experiences are best understood if they can be translated into something familiar to a person's prior experiences.

5. New experiences are remembered more easily if they can be related to a person's accumulated experiences.

Thus, knowing a student's prior experiences and their relation to the school curriculum may well help one predict a student's future achievement.

Environmental Background and School Performance

As Deutsch (1967) has pointed out, there is not a simple relationship between social background and school performance. Background variables influence the patterns of a child's perceptual, language, and cognitive development and the subsequent impact of these patterns on his academic and psychological performance.

> "The fact that development and experience are cumulative make it difficult ever to isolate any one antecedent period and assert that its influence was or was not influential in a subsequent developmental period" (Caldwell, 1967, p. 14).

In fact, Bloom (1964) has concluded that the effects of the environment tend to be greatest in the first three to four years of a child's life. Thus, demonstrating the relationship of a specific experience to later performance becomes difficult indeed.

It is common knowledge that children from underprivileged environments tend not to have the same preparation for entering school, both behaviorally and academically, as middle class children. Their socializing experiences are different, and the culture of their environment is not the same as the culture that has molded the educational system, its theories, and its practices. As McCreary (1966) states,

> "The socially disadvantaged are not lacking in knowledge, culture, and skills, but possess somewhat different understandings and abilities because of the circumstances of their lives" (p. 47).

Davis (1948) defines culture "as all behavior learned by the individual in conformity with a group" (p. 59). Culture sets goals and teaches inferences and relationships. If the culture of the academic classroom and the culture of a child's social environment are not the same, it may be difficult for the child to learn.

In the last several years psychologists have increased their investigation into the area of person-environment interaction. This research has spread over into educational psychology, and many people are now looking at the possibility of matching educational curricula to individual differences among students. Hunt (1975) has mixed feelings about the use in education of the B-P-E paradigm which states that behavior is a function of the person and the environment. He sees it basically as a means of describing student needs and questions its practical value in the classroom. He does think it is reasonable though to continue adding to our understanding of individual students and then to look for ways to translate such knowledge into practice.

Grouping Students by Their Environmental Background

Ability grouping has been a fairly common practice in education for a long time. Most grouping is performed by selecting instructional groups based on performance on academic achievement tests. Esposito (1973) questions this fact and wonders why people have not looked at ethnic and socioeconomic status when placing children in curricular tracks. He states that in studies where ability grouping has been related to improved scholastic performance it has generally been when modifications have taken place in either the curriculum or the teaching methods. Thus, the changes in the educational program may be the

cause for improvement in performance rather than the grouping of the students. He believes that new educational programs will be of minimal value unless the relationship of the variables associated with the structural properties and program conditions of the educational environment to the student's performance is investigated. This same viewpoint is echoed by Messick (1970).

> "My point is not only that we should look at interactions of selected measures in assessing treatment effects but that we should look at a broader range of personological and background variables, partly to describe the context of the findings and to monitor possible side effects and partly to be able to investigate the moderating influence of a combination of variables" (p. 214).

The idea of molding an instructional environment to a child's environmental background is very strong in compensatory education. Gould (1969) believes that in order for educational programs to be effective they are going to have to take into consideration the cultural background of the economically deprived child and how this influences his learning process. This is further illustrated in a study conducted by Jensen (1971) in a California school district. The results showed that when certain ability and background factors were statistically controlled for that there was little difference in academic performance between majority and minority students. Jensen stated though that:

> "it might be concluded that minority children are in fact, cheated if it were shown that their ability patterns require different instructional approaches to optimize their scholastic learning" (p. 3).

Glaser (1973) sums up this trend in educational programs the best when he says that:

> "It seems more apparent than ever that new educational methods that are insensitive to individual differences can account for only a small part of the variance in instructional effects; and it is likely that strong instructional strategies will necessarily be adaptive to a learner's background and educational history" (p. 562).

Biographical Data Model

The desire of educational psychologists to gather background information about students and to apply this information in formulating their curricula is apparent in the aforementioned statements. The problem then centers on how to collect the information and on how to apply it once it is collected. One solution to the problem is the developmental model derived by Owens (1968, 1971) which utilizes a comprehensive biographical questionnaire as the principal vehicle for differentiating individuals. More specifically, subjects are divided into subgroups on the basis of prior experiences such that those in a set have similar patterns of prior experiences, and at the same time are differentiated from those in other groups. Information concerning subject prior experiences is gathered through a biographical data form which asks socioeconomic, demographic, interest, and attitudinal

questions. The responses to the biodata form are then factor-analyzed, and each subject is scored on the resulting dimensions. A matrix of intersubject profile similarities is then formed and used as input to be hierarchically grouped into "families" via a procedure described by Ward and Hook (1963). Each subgroup is thus composed of people who show a similar pattern of prior experiences as exhibited by their similar biodata profiles. If the hypothesis that what a person will do in the future is best predicted by what he has done in the past is true, then people in the same subgroup should exhibit similar patterns of behavior in the future. Thus, students in the same subgroup should react similarly to a specific teaching model whereas students from different subgroups might react differently.

Research evaluating the biodata model has been conducted for the most part on college campuses and in industrial settings. Owens (1972) states that 80% of the results at that time were positive which seems to be ample justification for confidence in biodata-based subgroups. No one has attempted though to try to subgroup subjects at a fairly early age such as nine or ten. The experiences of children at this age are somewhat limited and some of the questions that would need to be answered would have to be directed at the parents rather than at the children. The method does seem viable

if a biodata questionnaire could be designed which would be administered to the parents but which would ask questions concerning the child.

Interviewing Studies

Several studies have been conducted in which the parents of children under study have been interviewed in order to gather environmental background information about the children. Baughm and Dahlstrom (1968) interviewed the mothers of kindergarten and eighth grade pupils by sending a questionnaire to each family. The questionnaire was organized to cover 11 topics but it was not factor analyzed. Questions were asked concerning family structure, histories of both parents, and various aspects of the child's life such as intellectual achievement, motor skills, assertiveness, etc. The data they present shows evidence that the family variables are related to the intellectual proficiency of the child.

Levine, Lachowicz, Oxman and Tangeman (1972) also interviewed the parents of kindergarten students. Their study dealt with two groups of students, one group in a parochial school and one group in a public school. Both of the schools had students from a low-rise housing project. The interviews were conducted with the Dave-Wolf Home Environment Schedule which is centered around six variables. The results suggested that the more supportive home environments of the students in the parochial

school may have led to their higher academic performance on reading readiness tests administered at the end of kindergarten.

A set of eight environmental forces were identified by Marjoribanks (1972) and then each force was defined in terms of a set of environmental characteristics. A semistructured home interview schedule was developed around these environmental characteristics and administered to mothers and fathers. A multiple correlation between the eight environmental forces and verbal, numerical, spatial, and reasoning abilities was computed with the environmental forces comprising the predictive set and the mental abilities serving as the criterion vectors. The environmental forces accounted for 50.4% of the variance in the verbal and numerical ability test scores and 16% of the variance in the reasoning ability test scores.

Another study conducted by Walberg and Marjoribanks (1973) uses these same environmental forces plus some indicators of social class such as parental income, education, and occupation. A canonical analysis of the data indicated that the environmental forces contributed more strongly to the prediction of academic abilities than the indicators of social class and the family structure characteristics.

Dave (1963) derived a home environment questionnaire that tapped six variables that he considered to be

relevant to educational achievement. These variables included (a) achievement press, (b) language models, (c) academic guidance, (d) activities of the family, (e) intellectuality of the home, and (f) work habits of the family. He then interviewed the mothers of 60 fourth graders and correlated their responses to the questionnaire with the results of the children's battery of achievement tests. He found a multiple correlation of +.80 between the overall index of the home environment and the battery of achievement tests.

In 1964 Wolf did a similar study correlating 13 process variables with the Henmon-Nelson IQ. He devised an interview centered around the process variables and interviewed the mothers of 60 fifth-grade students. He rated each family on the 13 variables and found a multiple correlation of +.76 between the ratings and the children's IQ's.

It is apparent that interviewing parents to find out information about the family's environment is not a new suggestion. The use of a questionnaire given to parents to subgroup elementary school students is new, though, and it is this concept that will be investigated in this paper along with the relationship between subgroups and academic performance.

CHAPTER 3

METHODS AND PROCEDURES

Biodata Questionnaire

After reviewing questions from other interviewing schedules (Baughm and Dahlstrom, 1968, Levine, et. al., 1972; and Marjoribanks, 1972) and from a questionnaire administered to high school students (Flanagan, 1964), it was decided that the items to be included in the biographical inventory should cover information in the following areas: Parental Background and Activities, Child's Previous Experiences, Home Environment, Socio-Economic Status, and Child's Present Health and Activities. Each of these areas was defined, and items were written to cover the description of each area. The complete biographical inventory is listed in Appendix A, and the breakdown of items in each category is given in Table 1.

Insert Table 1 about here

Parental background and activities. The background of one's parents and their everyday activities exert an

influence over a child's life and how he reacts to certain situations. What the parents are accustomed to and how they spend their time helps define the family's home environment both from a cultural point of view and a monetary point of view. There are 41 items classified as describing parental background and activities. These items cover the age and education of both parents as well as the types of jobs they have and their organizational activities. Although a number of the items in this category could be considered socio-economic items, an attempt has been made to delineate the area with items that describe what the parents are doing rather than placing a monetary value on their actions.

Child's previous activities. The items in the second category are concerned with the child's activities previous to the summer of the interview. The 11 items in this area inquire about preschool activities as well as the mobility of the family as a whole. The care a child receives before he starts school and how many times he has had to move and to meet and adjust to new friends often influences how a child will react in school.

Home environment. The 29 items listed in the Home Environment category describe the physical environment of the home. These items delineate who is present in the home and what their role is as well as the size of the home and the material elements that are present.

The physical stimuli that are available to the child in his home environment help shape his life and the activities he will find interesting both in and out of school. Again, some of these items could be considered to have a socio-economic background, but they are materially stated rather than monetarily stated.

Socio-economic status. The seven items in the Socio-Economic Status category have a definite monetary value. Certain socio-economic groups have values and activities that are representative of their financial standing. These values and activities can influence a child in his schoolwork and in his relationships with his peers and teachers. Other items in this biographical inventory are suggestive of socio-economic status, but they have been placed in more definitive categories unless they precisely state or convey a particular monetary value.

Child's health and activities. There are 14 items which ask questions concerning a child's present health and activities. Who a child associates with and how he spends his out-of-school time is often indicative of how he reacts in a learning situation. A child's health also affects his attitude in school and towards school as many learning problems may in fact be physical defects present in the child.

Sample

The original sample to be interviewed contained 99 students from the Gulfport Municipal Separate School District. All of the students had completed the third grade, had attended school in Gulfport for the past three years, had taken the Metropolitan Readiness Test in September of their first year in school, and had taken the California Achievement Test, Level 2 at the beginning of the third grade. Forty-nine of the students were members of the Follow Through Program and 50 of the students were non-Follow Through students.

The total number of parents interviewed was 81. Forty-three were parents of Follow Through students and 38 were parents of non-Follow Through students. Six of the families had moved away from Gulfport, and 12 of the parents did not want to be interviewed. All of the interviews were conducted in person by the same individual. At some of the interviews both parents were present, but it was generally the mother who answered the questions.

Data Analysis

Item deletion. Once the biographical inventory was administered to everyone, certain items had to be deleted or divided into two or more dichotomous items. Thirty-three items were deleted because a large majority of the individuals interviewed chose the same response.

A list of the deleted items by category is given in Table 2. The majority of the items which were deleted were either in the Parental Background and Activities category or the Home Environment category. Five items were divided into three or four separate dichotomous items. This division was performed because the items did not lie on a continuum, and it did not make sense to quantify the responses. Five more items were treated as dichotomous items when they were scored as they also did not lie on a continuum. These item numbers and the new dichotomous items are listed in Appendix B. Thus, at the beginning of the analysis there were 81 responses to the biographical inventory for each student.

Insert Table 2 about here.

Factor analysis. Since the biographical inventory was administered to only 81 people, it was not possible to factor analyze the entire inventory at the same time. Instead, five separate factor analyses were performed in succession to each other. After the first factor analysis was completed, each successive analysis included the items with the highest factor loadings from the immediately preceeding factor analysis plus additional items from the inventory. Each factor analysis used a principal axis solution with an orthogonal rotation of the factor matrix. The communalities were

estimated from the squared multiple correlation coefficients. The 21 items in the Home Environment category were factor analyzed first. The eight items with the highest factor loadings after two factors were rotated were selected from this analysis to be included in the second factor analysis along with the eight items in the Socio-Economic Status category and seven items from the Child's Previous Experiences category. The third factor analysis included the ten items with the highest factor loadings on the three rotated factors in the second factor analysis plus the items in the Child's Present Activities and Health category. Twenty-nine items were included in the fourth factor analysis. In addition to the 13 items with the highest factor loadings on the four rotated factors in the third factor analysis, there were 16 items from the Parental Background and Activities category. The fifth factor analysis included the 16 items with the highest factor loadings on the three factors that were rotated in the fourth factor analysis and the remainder of the items in the Parental Background and Activities category. The items with the highest factor loadings after each factor analysis can be found in Appendices C through G.

Looking through the five factor analyses, there appeared to be 22 items which had high factor loadings on one or more of the analyses. These items seemed to

represent the following five areas: (1) socio-economic indicators, (2) family composition, (3) child's health, (4) description of father's employment and activities, and (5) description of mother's employment. Table 3 gives a brief description of the items included in each area.

Insert Table 3 about here

The parents' responses to these 22 items were retained for use in the subgrouping analysis. All of the responses were converted to z scores since the main purpose was to find out where a specific response was located in the distribution of responses rather than the numerical value of the response. The z scores for each student in each of the five areas listed above were summated to obtain a score similar to a factor score. These five scores were then subjected to a z score transformation to get each student's relative standing in the distributions of each of the areas.

The correlation matrix for the five areas is shown in Table 4. In general, all of the areas seem to be measuring a different aspect of the students' backgrounds. The one exception is the relatively high intercorrelation of the area describing the father's employment and organizational activities with the area describing the socio-economic status of the family. The original

reason for separating these two categories was the fact that the father was absent in 14 of the 81 families interviewed. If a father had been present in every family, it probably would have been advantageous to group the items in these two areas together.

Insert Table 4 about here

Subgrouping

The next step was to form homogeneous groups of students on the basis of their biographical inventory profiles. Because of the numerous possible combinations of profiles, it was necessary to use an algorithm which approaches the optimal solution. The procedure used was one which has been used successfully in analyzing biographical inventories for college students (Schoenfeldt, 1972). It consists of three segments which are illustrated in Figure 1. First, the intersubject profile similarity is calculated. Secondly, clusters are formed containing individuals with similar profiles. The final step involves an evaluation of the fit of each individual to his assigned group.

Insert Figure 1 about here

The Eucledian distance was used as the measure of profile similarity. The clustering procedure which was used is based on the hierarchical grouping technique

developed by Ward (1963, Ward and Hook, 1963). This technique is an iterative procedure which minimizes the within-group sums of squares while maximizing the between-group sums of squares at each level of the hierarchical structure. No assumptions are made as to the number of groups that should be present in the sample.

In the hierarchical grouping procedure, once a subject has been assigned to a particular group he cannot be changed. This means that at the conclusion of the grouping process the fit of each individual to his subgroup may not be optimal. For this reason, a two part procedure was employed to detect individuals who either did not fit any group well (isolates) or fit two or more groups equally well (overlaps). The first part of the procedure was an affirmation run which identified individuals who were isolates and overlaps by comparing their individual D-squares to the group means. The second part was a discriminant analysis which listed the probability of membership for each subject in each of the subgroups.

Once the students had been assigned to specific subgroups, four separate analyses of variance were performed to discern differences in achievement test scores for various subgroups. A multivariate analysis of variance was performed with the subtest scores of the Metropolitan Readiness Test serving as the dependent variables and subgroup membership serving as the independent

variable. Also calculated was a univariate analysis of variance for the total score on the MRT. The same two analyses were performed for the subtests of the California Achievement Test, Level 2 and the total test score on the CAT.

CHAPTER 4

RESULTS

A more general description of each of the areas used in the biographical profile for each student is given in Table 5. These are the areas that were used in the hierarchical grouping technique.

Insert Table 5 about here

At the conclusion of the clustering program, it looked as if the optimal solution was the one which divided the students into 10 subgroups. One of these subgroups was a one-person group, and this person was treated as an isolate. After the affirmation program and the discriminant analysis were completed, four students were identified as belonging to two or more groups. These four students were eliminated from the analysis which resulted in a final group classification of 76 students among nine subgroups. Table 6 shows the general characteristics of each of the nine subgroups in relation to the five areas of the biographical profile. Differences among subgroup means were significant in all areas.

Insert Table 6 about here

Because of the small sample size, separate analyses were not computed for males and females and for Follow Through and non-Follow Through students. In Table 7 one can see how male and female Follow Through and non-Follow Through students are distributed across the nine subgroups. Subgroups 1 and 5 have the largest number of male Follow Through students. Female Follow Through students appear basically in Subgroups 4, 5 and 6. Almost half of the male non-Follow Through students appear in Subgroup 2, and more than half of the female non-Follow Through students appear in Subgroups 1 and 2. The distribution of Follow Through and non-Follow Through students is not equal across subgroups, but except for Subgroup 7, all subgroups have members from both groups of students.

Insert Table 7 about here

A multivariate analysis of variance was performed on the subtests of the Metropolitan Readiness Test to determine to what extent subgroup membership affected the subtest scores of the students on the MRT. The hypothesis of equal scores among subgroups was rejected for the Wilks Lambda criterion. Only the first discriminant function was significant ($P<.01$) as can be seen in

Table 8. The univariate F tests, which are summarized in Table 9, revealed that the subgroups differed significantly on three of the MRT subtests - Word Meaning, Listening, and Copying. After applying the discriminant function coefficients to the subgroup means, it became apparent that the students in Subgroups 1, 2 and 8 were performing differently than the students in Subgroups 3, 4, 5, 6, 7, and 9. The distribution of groups is shown in Figure 2. The correlations between the subtest scores and the discriminant function are given in Table 10. These correlations indicate that the Word Meaning and Listening subtests contributed most to the discrimination among groups. Even though the copying subtest had a significant univariate F, it contributed the least amount to the discrimination among groups. The main reason for this was the reversal of mean scores for Subgroup 8. They had relatively high mean scores on all of the subtests except for copying whereas Subgroups 1 and 2 had relatively high mean scores on all the subtests. Subgroup means and standard deviations on the subtests of the MRT are given in Table 11.

Insert Tables 8 - 11 and Figure 2 about here

A univariate analysis of variance was performed on the Total Test score of the Metropolitan Readiness Test. There was a significant difference ($F = 4.47$, $df = 8, 67$,

p <.001) between the subgroups. Applying the Scheffe method for testing differences between all possible pairs, it was found that Subgroup 1 differed significantly (p <.05) from the remaining subgroups. The means and standard deviations of the subgroups on the MRT Total Test score are given in Table 12.

Insert Table 12 about here

A second multivariate analysis of variance was performed on the subtests of the California Achievement Test, Level 2. The hypothesis of equal scores among subgroups was confirmed. The univariate F tests, as would be expected, showed no significant differences among subgroups. Table 13 lists the means and standard deviations of the nine subgroups on the subtests of the CAT, Level 2. The univariate analysis of variance on the Total Test score for the CAT, Level 2 showed no differences among the mean scores of the subgroups. The means and standard deviations of each of the subgroups on the Total Test score of the CAT, Level 2 are listed in Table 14.

Insert Tables 13 and 14 about here

CHAPTER 5

DISCUSSION AND CONCLUSIONS

The results of the analyses show that Subgroups 1, 2, and 8 are superior to the remaining subgroups with regards to test performance on the subtests of the Metropolitan Readiness Test. The MRT is comprised of six subtests which are designed to measure the extent to which children beginning school have developed the skills and abilities that contribute to readiness for first grade instruction. These skills and abilities include linguistic attainments and aptitudes, visual and auditory perception, muscular coordination and motor skills, number knowledge, and the ability to follow directions and to pay attention in a group work session. Children who do well on the examination are expected to be prepared for a classroom learning experience.

The three subgroups that do well on the MRT subtests have two common elements in their profiles. They are all high on socio-economic indicators, and they are all high on father's employment and activities. Their profiles are not similar on the three remaining areas. Students in Subgroup 2 are low on family composition

whereas students in Subgroups 1 and 8 are near the mean. In the area relating to the child's health, Subgroup 1 is near the mean, Subgroup 2 is low and Subgroup 8 is high. Subgroups 2 and 8 are high on description of mother's employment while Subgroup 1 is low in this area. Thus, even though these three subgroups have common elements in their profiles which may help their test performance, they also have different elements in their profiles. It is the combination of all the background variables which influences test performance, and these three subgroups have profiles that lead to higher test scores on the MRT. In general, the students in Subgroups 1, 2 and 8 would be better prepared to start first grade than the students in the remaining subgroups.

The six remaining subgroups are either low or close to the mean values in the two areas, socio-economic indicators and description of father's employment and activities, in which Subgroups 1, 2 and 8 are high. They have varying profiles in the other three areas. Subgroups 3, 5 and 9 are low on family composition whereas subgroups 4, 6 and 7 are high in this area. With regards to the child's health, Subgroups 7 and 9 are low, Subgroups 3, 4 and 5 are near the mean, and Subgroup 6 is high. Subgroups 4, 6 and 9 are low on description of mother's employment while Subgroup 7 is near the mean of this area and Subgroups 3 and 5 are high.

It is, therefore, again demonstrated that even though the subgroups have common elements in their profiles that may influence their test performance, they also have different elements in their profiles. The specific combination of background variables in these subgroups tends to lead to lower test performance on the MRT. Thus, the children in Subgroups 3, 4, 5, 6, 7, and 9 do not seem to be as well prepared for school at the beginning of first grade as the students in Subgroups 1, 2 and 8.

The two main areas that separate the subgroups into high test performers and average or low test performers are centered around socio-economic variables. These variables seem to divide the sample into two main groups which then are differentiated in other areas.

The two sets of subgroups are also different in their proportion of Follow Through and non-Follow Through students. Seventy-one percent of the students in Subgroups 1, 2 and 8 are non-Follow Through students and 71 percent of the students in the remaining six subgroups are Follow Through students. Seventy-eight percent of the total Follow Through population is in the subset of subgroups that perform less well on the MRT. It would thus appear that the majority of the Follow Through students are starting school with the disadvantage of being less well prepared for a classroom learning experience than the majority of their non-Follow Through peers.

The California Achievement Test, Level 2 was administered to these students at the beginning of the third grade. It is composed of seven subtests that are designed to test a student's reading ability, his knowledge of mathematical concepts, his ability to work with numbers, and his knowledge of the English language. A high score on the examination indicates that a child has a good grasp of the fundamentals that are taught during the first few years of elementary school.

The results of the multivariate analysis which were reported in Chapter 4 show that there are no significant differences in test performance among the subgroups by the time the students take the CAT at the beginning of the third grade. After two years of education, Subgroups 1, 2 and 8 are no longer significantly superior in test performance when compared to the remaining subgroups. Thus, even though the children in Subgroups 3, 4, 5, 6, 7 and 9 did not seem to be as well prepared for school as the children in Subgroups 1, 2 and 8, they seem to have overcome their disadvantages during the first two years of school. Because both Follow Through and non-Follow Through students were in each subset of subgroups, the improved test performance of the low scoring subgroups cannot be said to be solely caused by a specific educational program. It is important to point out

again though, that the majority of the students in the low scoring subgroups at the beginning of the first grade were Follow Through students and that their performance at the beginning of the third grade was not appreciably different from the high scoring subgroups of which a majority of the children were non-Follow Through students. Looking at the data, it would be very hard to say that the Follow Through program did not in some way help improve the test scores of the students in the low scoring subgroups.

The size of the sample used in this study served as a restriction on the analysis of the data. The number of potential students available at the beginning of the study was limited by requiring the students to meet certain conditions which are listed in Chapter 3, and the number of students actually used in the study was even less than the potential number because of the inability to locate certain students and the refusal of some parents to be interviewed.

A larger sample size would have improved the study in three ways. First of all, the more people that are interviewed, the more chance there is of covering a wider variety of people. Having a wider variety of people would mean that more of the options for the items on the biographical inventory would be used which would help increase the power of the inventory to discriminate

among individuals. Secondly, a sufficiently large sample size would make it possible to factor analyze the biographical inventory all at one time and to compute actual factor scores for each of the individuals. This would also help make the inventory a more powerful tool. Finally, a larger sample size would allow one to subgroup the Follow Through and non-Follow Through students separately. Assuming that both sets of students would be delineated by the same factors, the multivariate analyses would then give one more of an insight into the effects of a specific educational program on each subgroup.

Even though the results of the study are limited by the sample size, there are still things to be learned from the data. First of all, it was discovered that there are enough differences in the past experiences and environmental backgrounds of elementary school children to enable them to be subgrouped. This then opens the door for using biodata research with elementary school children in examining educational questions as well as questions in other subject areas. Secondly, even with the small number of students involved in this study, there were initial differences in test performance among the subgroups at the beginning of first grade which disappeared after two years of schooling. The educational program of the MAP model of Follow Through cannot be given sole credit for this improvement in test perfor-

mance, but it seems reasonable to assume that the program had some influence on improving the test scores of the low performing subgroups.

Having shown that the biographical research model is a viable means of investigating questions concerning elementary school children, it is interesting to think about the results of a large scale study involving thousands of students and the multiple models of Follow Through. It could be the beginning of aiming educational programs at specific groups of students. Using the same subgroups as the ones derived here or ones similar to them, a few thousand students, and test results from all of the Follow Through models, the result could be the ability to prescribe educational programs that optimally cater to the characteristics of each subgroup of individuals. This could be the breakthrough that educational psychologists are looking for to enable them to pattern educational programs to the environmental backgrounds of individual students.

Table 1

Items In Each Category

I Parental Background and Activities	2, 3, 4, 5, 6, 7, 8, 9, 12, 13 14, 15, 16, 17, 18, 19, 20, 21 22, 23, 24, 25, 26, 27, 28, 29 30, 31, 32, 33, 65, 66, 67, 68 69, 70, 71, 72, 73, 74, 75
II Child's Previous Experiences	10, 11, 34, 35, 36, 80, 83, 84 85, 86, 101
III Home Environment	1, 37, 43, 44, 45, 46, 47, 48 49, 50, 51, 52, 53, 54, 55, 56 57, 58, 59, 60, 61, 62, 63, 76 77, 78, 79, 81, 82
IV Socio-Economic Status	38, 39, 40, 41, 42, 64
V Child's Present Health and Activities	87, 88, 89, 90, 91, 92, 93, 94 95, 96, 97, 98, 99, 100

Table 2

Deleted Items In Each Category

I Parental Background and Activities	2, 7, 13, 16, 22, 25, 26, 27 28, 31, 32, 33, 66, 68, 73
II Child's Previous Experiences	35, 36, 80, 85
III Home Environment	37, 45, 46, 47, 48, 49, 50, 51 52, 53, 54, 55
IV Socio-Economic Status	
V Child's Present Health and Activities	90, 91

Table 3

Description of Items in Each Area

Area	Items
SES Socio-economic Indicators	1. Source of support 2. Large appliances 3. Sports equipment 4. Value of home 5. Total income
FC Family Composition	1. Number of children 2. Number of older males 3. Number of older females 4. Number of people at home
CH Child's Health	1. Times sick 2. General Health 3. Visits to doctor
FE Description of father's employment and activities	1. Father's education 2. Father's job 3. Father's supervision 4. Father's responsibilities 5. Father's church participation 6. Father's PTA participation
ME Description of mother's employment	1. Mother's type of work 2. Mother's length of employment 3. Mother's supervision 4. Mother's responsibilities

Table 4

Intercorrelation of Scores from the Five Areas

Used in the Subgrouping Analysis

	SES	FC	CH	FE	ME
SES	1.000				
FC	-0.183	1.000			
CH	0.054	0.277	1.000		
FE	0.781	-0.180	-0.026	1.000	
ME	-0.008	-0.233	-0.000	-0.022	1.000

Table 5

Description of Areas in Terms of

High Scoring Individuals

SES	Socio-economic indicators Father provides support for family, numerous large appliances present in home, numerous varieties of sports equipment in home, expensive home, high total income.
FC	Family composition Numerous children in family, child has several older brothers and sisters, a larger number of people live in child's home.
CH	Child's health Child is often sick, his general health is poor, and he sees a doctor frequently.
FE	Description of father's employment and activites Father has a fairly high level of education, has a managerial or professional job, supervises several people and has financial responsibilities on the job. Father is also active in his church and the PTA.
ME	Description of mother's employment Mother works full time and has done so for several years. She also is in a supervisory position and has financial responsibilities on the job.

Table 6

Magnitude of Differences Between Subgroup Means on Profile Areas [a]

Group	N	SES	FC	CH	FE	ME
F-Ratios[b]:		42.48	16.77	14.82	38.66	23.54
1	12	H			H	L
2	15	H	L	L	H	H
3	8	L	L		L	H
4	6	L	H		L	L
5	12		L			H
6	10		H	H		L
7	4	L	H	L		
8	4	H		H	H	H
9	5		L	L		L

Total 76

[a]H = Group mean is more than .5 S.D. above grand mean

L = Group mean is more than .5 S.D. below grand mean

[b]Differences among subgroup means were significant ($p < .05$) in all areas.

Table 7

Distribution of Male and Female Follow Through

And Non-Follow Through Students Across Subgroups

Group	Male FT	Female FT	Total FT	Male NFT	Female NFT	Total NFT	Total Group
1	4	1	5	2	5	7	12
2	1	0	1	7	7	14	15
3	1	3	4	2	2	4	8
4	1	4	5	0	1	1	6
5	4	5	9	3	0	3	12
6	1	6	7	1	2	3	10
7	2	2	4	0	0	0	4
8	2	1	3	1	0	1	4
9	2	1	3	0	2	2	5
Total	18	23	41	16	19	35	76

Table 8

Multivariate Test of Significance

	Eigen-value	Wilks Lambda	F	Hypothesis Deg. of Free.	Error Deg. of Free.	Significance of F	Canonical Correlation
1	.83	.31	1.68	48	299.29	.005	.68
2	.44	.57	1.06	35	288.38	.378	.55
3	.16	.82	.54	24	272.24	.964	.37
4	.04	.94	.25	15	249.50	.998	.19
5	.01	.98	.17	8	218.53	.995	.11
6	.01	.99	.19	3	177.69	.903	.10

Hotelling Trace Criterion = 1.48498

Largest Root Criterion = .45285

Table 9

Univariate F-Tests for Subtests of the Metropolitan Readiness Test

Variate	F	Significance of F
Word Meaning	3.9022	.0008**
Listening	2.1705	.04129*
Matching	1.6522	.12746
Alphabet	1.4322	.20017
Numbers	1.2942	.26226
Copying	2.4314	.02298*

Degrees of Freedom (8, 65)

* $p < .05$

** $p < .01$

Table 10

Correlations Between the MRT Subtests

And the Discriminant Function

Subtest	Correlation
Word Meaning	-.72
Listening	-.55
Matching	-.38
Alphabet	-.30
Numbers	-.42
Copying	-.20

Table 11

Subgroup Means and Standard Deviations on the Subtest Scores of the Metropolitan Readiness Test

	Subgroups								
	1	2	3	4	5	6	7	8	9
Word Meaning									
Mean	9.7	9.0	6.8	5.8	6.3	7.4	6.5	7.8	5.0
S.D.	2.2	1.8	2.1	2.2	1.3	2.2	1.3	4.3	4.2
r = .61									
Listening									
Mean	11.2	10.5	7.8	8.3	8.2	8.9	8.3	9.5	8.2
S.D.	2.5	2.0	2.9	2.0	3.1	1.9	2.1	2.4	4.0
r = .52									
Matching									
Mean	9.8	8.3	6.2	6.2	6.5	7.9	7.5	5.5	6.2
S.D.	2.3	3.2	3.9	2.9	3.2	3.3	4.5	1.7	3.9
r = .82									
Alphabet									
Mean	12.5	12.9	9.1	11.2	11.5	8.7	11.0	11.3	10.8
S.D.	3.1	2.1	6.2	4.1	3.5	4.2	2.4	3.9	4.0
r = .88									
Numbers									
Mean	12.6	12.4	9.7	8.8	10.1	10.0	9.0	11.0	9.6
S.D.	3.3	4.0	5.8	3.5	2.9	3.1	4.4	3.7	2.7
r = .80									
Copying									
Mean	10.5	7.3	8.2	6.8	6.7	6.6	8.3	3.8	6.2
S.D.	2.1	3.1	4.2	3.0	3.1	3.6	1.0	2.2	5.3
r = .81									

Table 12

Subgroup Means and Standard Deviations on the Total Test Score[a] of the Metropolitan Readiness Test

Subgroups	N	Mean	Standard Deviation
1	12	66.2	12.0
2	15	60.4	11.8
3	8	37.9	25.0
4	6	47.2	9.5
5	12	49.2	11.6
6	11	48.5	9.7
7	5	47.6	11.3
8	4	48.8	8.7
9	3	36.3	12.5

[a]Reliability of Total Test Score is .92

Table 13

Subgroup Means and Standard Deviations on the Subtest Scores of the California Achievement Test, Level 2

	Subgroups								
	1	2	3	4	5	6	7	8	9
Read. Voc.									
Mean	31.5	32.7	29.5	25.6	31.4	30.8	28.5	35.0	22.0
S.D.	7.6	6.9	8.6	0.9	4.1	7.9	8.7	3.2	2.8
Read. Comp.									
Mean	27.5	28.2	15.8	14.0	27.1	21.5	22.3	30.0	15.5
S.D.	14.9	10.4	9.8	5.6	8.8	8.6	11.9	9.8	12.0
Math. Comp.									
Mean	44.7	45.7	40.4	35.0	37.8	45.6	50.5	42.5	51.5
S.D.	13.5	14.6	9.9	11.6	12.3	13.7	8.3	12.8	9.2
Math. Conc.									
Mean	31.7	31.8	25.9	24.2	29.8	29.4	25.3	30.8	23.0
S.D.	6.9	6.8	7.9	3.3	4.9	8.0	10.0	5.8	4.2
Lang. Mech.									
Mean	27.4	20.5	15.8	20.8	18.7	21.6	23.5	27.3	29.0
S.D.	14.3	8.2	9.3	15.9	9.0	11.5	12.6	18.3	2.8
Lang. Usage									
Mean	13.0	15.3	9.5	11.0	13.2	11.4	10.5	14.3	8.0
S.D.	5.4	4.9	4.6	3.7	3.1	4.9	4.5	2.1	7.1
Lang. Spell.									
Mean	14.7	13.9	12.8	11.6	14.6	16.3	14.0	15.3	9.0
S.D.	4.8	2.8	2.3	4.9	4.2	7.7	9.5	7.8	7.1

Table 14

Subgroup Means and Standard Deviations on the Total Test Score[a] of the California Achievement Test, Level 2

Subgroup	Mean	Standard Deviation
1	190.6	57.4
2	188.1	39.4
3	149.5	41.1
4	142.2	31.7
5	172.6	26.5
6	173.8	42.2
7	174.5	60.9
8	195.0	49.1
9	158.0	45.3

[a]Reported reliabilities of Total Test score range from .95 to .98.

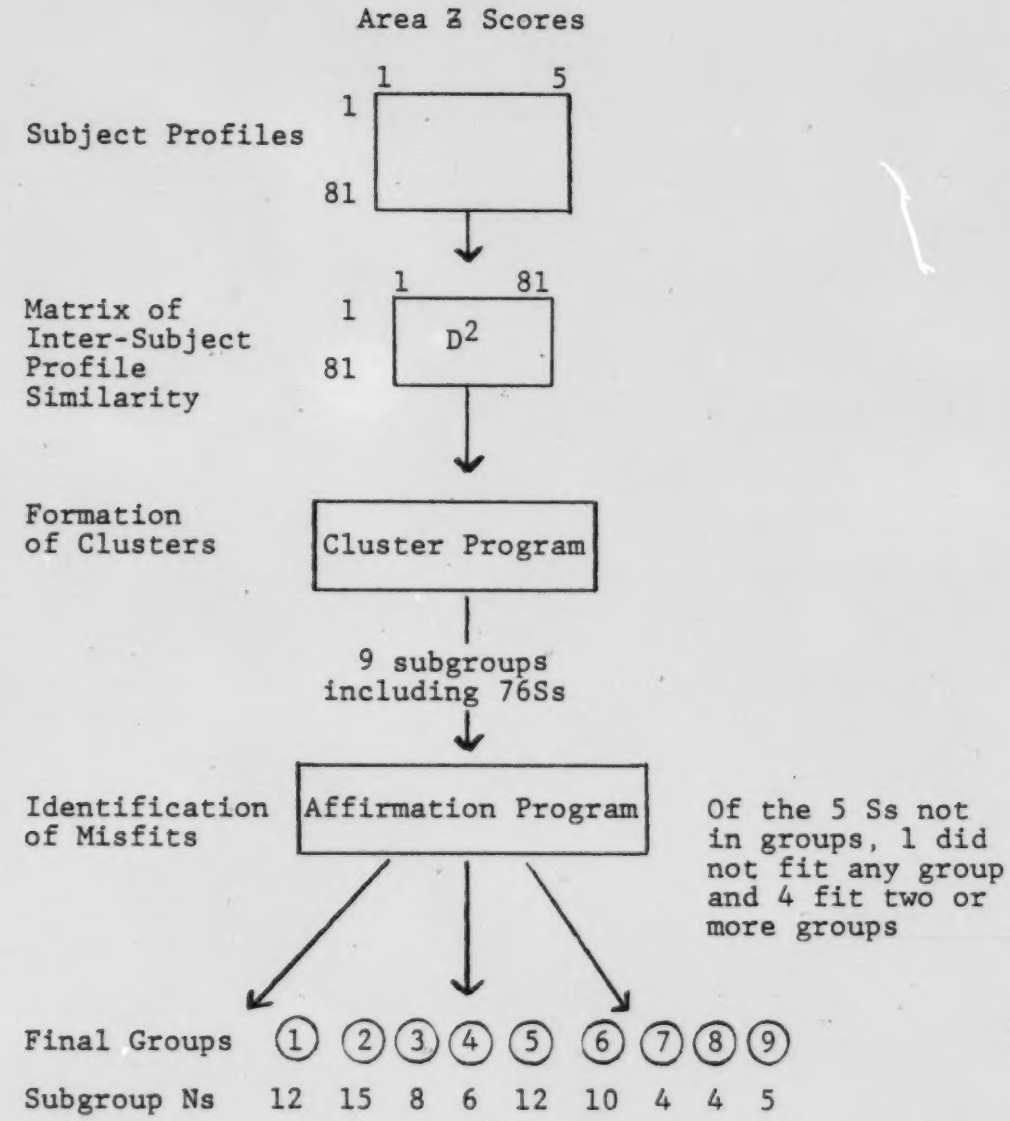
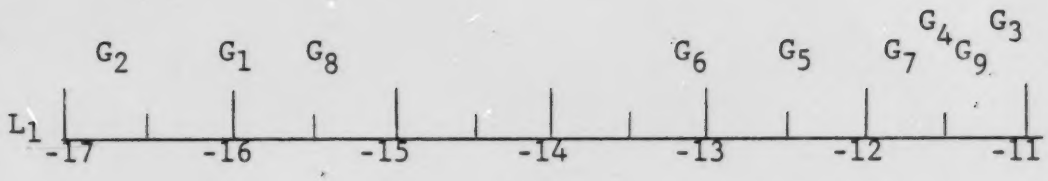


Figure 1. Procedure for deriving subgroups



L_1 = (-.84573) (Word Meaning) + (-.32982) (Listening) +
(-.31530) (Matching) + (-.28005) (Alphabet) +
(-.27964) (Numbers) + (.55715) (Copying)

Figure 2. Distribution of groups according to discriminant function analysis.

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APPENDIX A

BIOGRAPHICAL INVENTORY

1. Who provides the main source of support for the family?

   A. Father
   B. Male guardian or male relative
   C. Mother
   D. Female guardian or female relative

2. Does the father work for pay on more than one job?

   A. No
   B. Yes, two
   C. Yes, three
   D. Yes, four

3. Does the father direct or supervise the work of other people? (If he works on more than one job, mark the answer for the most important job. If he is now out of work, or if he is retired, mark the answer for the last job.)

   A. No
   B. Yes, a few people (up to 4 or 5 people)
   C. Yes, many people (from 6 to 19 people)
   D. Yes, very many people (20 to 49 people)
   E. Yes, 50 or more people

4. Which one of the following best describes the father's responsibility for money and property on his job? (If he works at more than one job, answer the question for the most important one. If he is temporarily unemployed, or if he is retired, answer the question for the last job.)

   A. He is not in charge of any money or property.
   B. He is in charge of small amounts of money or property such as daily cash receipts, merchandise, or a few tools or machines.

C. He is in charge of fairly large amounts of money, merchandise, or other property such as daily cash receipts and merchandise, for a whole department.
D. He is in charge of a great deal of money, merchandise, or property such as cash receipts or merchandise for an entire store or business.

5. Has the mother worked for pay at any time in the last ten years?

A. No
B. Yes, occasional part-time work
C. Yes, regular part-time work
D. Yes, occasional full-time work
E. Yes, regular full-time work

6. How long has the mother been working for pay?

A. She has not done this
B. One year or less
C. More than one year but less then three years
D. More than three years but less than five years
E. More than five years but less than seven years
F. More than seven years

Items 7-9. Answer the following items only if the mother is presently working or temporarily out of work.

7. Does the mother work for pay on more than one job?

A. No
B. Yes, two
C. Yes, three
D. Yes, four

8. Does the mother direct or supervise the work of other people? (If she works on more than one job, answer the question for the most important one. If she is presently unemployed, answer the question for the last job.)

A. No
B. Yes, a few people (up to 4 or 5 people)
C. Yes, many people (from 6 to 19 people)
D. Yes, very many people (20 to 49 people)
E. Yes, 50 or more people

9. Which one of the following best describes the mother's responsibility for money and property on the job? (If she works on more than one job, answer the question for the most important one. If she is presently unemployed, answer the question for her last job.)

   A. She is not in charge of any money or property.
   B. She is in charge of small amounts of money or property such as daily cash receipts, merchandise, or a few tools or machines.
   C. She is in charge of fairly large amounts of money, merchandise, or other property such as daily cash receipts and merchandise for a whole department.
   D. She is in charge of a great deal of money, merchandise, or property such as cash receipts and merchandise for an entire store or business.

10. How soon after the birth of this child did the mother return to work?

   A. The mother did not work.
   B. Six months or less after the birth.
   C. Seven months to a year after the birth.
   D. One to two years after the birth.
   E. Two to three years after the birth.
   F. Three to four years after the birth.
   G. Four to five years after the birth.
   H. Five to six years after the birth.
   I. Six or more years after the birth.

11. If the mother returned to work before the child entered school, where did the child stay? (If the child stayed more than one place, check the one where he/she stayed the longest.)

   A. The mother did not work before the child entered school (either kindergarten or first grade)
   B. Relative - grandparents, aunt, cousins, etc.
   C. Babysitter in the child's home
   D. Took child to a baby sitter
   E. Day care center
   F. Child stayed with friends

12. What was the father's highest rank while in military service?

A. He did not serve.
B. Enlisted man (not a non-commissioned officer)
C. Non-commissioned officer
D. Officer

13. Were the parents born in the United States?

A. Father was born in the U.S. but mother was not.
B. Mother was born in the U.S. but father was not.
C. Both parents were born in the U.S.
D. Both parents were born outside the U.S.

Items 14-22. How active has the father been in any one or more of the following organizations?

14. Church or religious group, teaching Sunday School, or charity work

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

15. School organizations, such as the school board, Parent-Teacher's Association, etc.

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

16. Political groups or organizations such as local Democratic Party, local Republican Party, City Council, etc.

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

17. Labor union or trade union activities

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

18. Business or professional associations

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

19. Sports club, team, or organization such as softball team, bowling league, etc.

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

20. Social groups (Elks, Mooses, etc.)

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

21. Civic organizations (Rotary, Lions, Kiwanis, etc.)

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

22. Active military reserve unit or veteran's organizations (American Legion, Veterans of Foreign Wars, etc.)

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

Items 23-31. How active has the mother been in any one or more of the following organizations?

23. Church or religious group, teaching Sunday School or charity work

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

24. School organizations, such as school board, Parent-Teacher's Associations, etc.

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

25. Political groups or organizations such as local Democratic Party, local Republican Party, City Council, etc.

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

26. Labor union or trade union activities

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

27. Business or professional associations

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

28. Sports club, team, or organization such as bowling league, bridge club, etc.

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

29. Social groups (Eastern Star, D.A.R., etc.)

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

30. Civic organizations (League of Women Voters, etc.)

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

31. Auxiliary of veteran's organizations (American Legion, Veteran's of Foreign Wars, etc.)

A. Not a member of any of these organizations
B. A member, but rarely active
C. Fairly active
D. Very active

32. How well does the father speak any foreign language?

A. Doesn't speak a foreign language
B. Speaks a foreign language rather poorly
C. Speaks a foreign language fairly well
D. Speaks a foreign language fluently
E. Speaks a foreign language very fluently

33. How well does the mother speak any foreign language?

A. Doesn't speak a foreign language
B. Speaks a foreign language rather poorly
C. Speaks a foreign language fairly well
D. Speaks a foreign language fluently
E. Speaks a foreign language very fluently

34. How long has the child lived in this community?

A. One year or less
B. More than one year but not more than three years
C. More than three years but not more than five years
D. More than five years but not more than ten years
E. All of his/her life

35. Which one of the following best describes the community in which the child lived just before moving to this community?

A. A farm or village with less than 2500 people (not a suburban area of a city)

B. In a small city or town with 2500 to 25,000 people (not the suburban area of a city)
C. Inside a medium sized city with 25,000 to 100,000 people
D. Inside a large city with 100,000 or more people
E. In suburban areas, towns, or villages around a city
F. He or she has lived here all his/her life

36. How many different houses or apartments (not considering vacations away from the regular home) has the family lived in, in the last three years?

A. One
B. Two
C. Three
D. Four
E. Five
F. Six or more

37. Which one of the following best describes the building in which the family now lives?

A. A rooming house, hotel, or mobile home
B. A large apartment house (5 families or more)
C. A small apartment house (3 or 4 families)
D. A two-family house
E. A one-family house

38. If the family is renting the home or the place where they live, about how much are they paying a month?

A. Less than $100
B. $100 to $129
C. $130 to $159
D. $160 to $189
E. $190 or more
F. We have bought or are buying our home.

39. If the family has bought (or is buying) a home, what is its present value?

A. Under $10,000
B. $10,000 to $14,999
C. $15,000 to $19,999
D. $20,000 to $30,000
E. More than $30,000
F. We are renting our home

40. Please make the best estimate possible of the family's total income for last year (1974). Include money earned by both parents and anyone else in the household who worked.

A. Less than $4,000
B. $4,000 to $6,999
C. $7,000 to $9,999
D. $10,000 to $14,999
E. $15,000 or more

41. Which one of the following best describes the family's finances?

A. Barely able to make a living
B. Have the necessities
C. Comfortable
D. Well-to-do
E. Wealthy
F. Extremely wealthy

42. From which one of the following sources does the family get most of its income?

A. Professional fees
B. Business profits (including profits from a farm)
C. Fixed salary (paid on a weekly, monthly, or yearly basis)
D. Wages (paid on an hourly or daily basis and depending on the number of hours worked)
E. Commissions or royalties
F. Some other source not mentioned above

43. How many books are in the home?

A. None, or very few (0 - 10)
B. A few books (11 - 25)
C. One bookcase full (26 - 100)
D. Two bookcases full (101 - 250)
E. Three or four bookcases full (251 - 500)
F. A roomful - a library (501 or more)

Items 44 - 52. How many of each of the following kinds of magazines does the family regularly get at home (by subscription or purchased regularly)?

44. Ladies' magazines, homemaking magazines, or fashion magazines, (such as Ladies' Home Journal, McCall's Redbook, Cosmopolitan, Better Home and Gardens, Good Housekeeping, House Beautiful, etc.)

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

45. Men's magazines or sports magazines (such as Sports Afield, Sports Illustrated, Field and Stream, Esquire, Argosy, True, etc.)

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

46. Movie magazines, love stories, detective stories (such as Modern Screen, Photoplay, Silver Screen, True Story, Sweetheart Stories, True Romance, Real Detective, Official Detective Stories, True Detective, etc.)

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

47. Mechanics, electronics, aviation, or automobile magazines (such as Popular Mechanics, Mechanix, Illustrated Science and Mechanics, Hot Rod, Motor Trend, Motor Life, etc.)

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

48. Farm magazines (such as Farm Journal, Progressive Farmer, Farm and Ranch, Prairie Farmer, Successful Farmer, etc.)

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

49. News or pictorial magazines (such as Newsweek, Time, U.S. News and World Report, etc.)

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

50. Business magazines (such as Business Week, Nation's Business, etc.)

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

51. Opinion magazines (such as The Nation, The New Republic, The Reporter, The Progressive, etc.)

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

52. Professional or trade journals or magazines

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

Items 53 - 55. How many of the following does the family regularly get at home (by subscription or purchased regularly)?

53. Atlantic Monthly, Harper's, National Geographic, Saturday Review, Fortune, New Yorker

A. None
B. One
C. Two
D. Three
E. Four
F. Five

54. Reader's Digest, Coronet, Saturday Evening Post

A. None
B. One
C. Two
D. Three
E. Four
F. Five

55. Parent's Magazine, Boy's Life, American Girl, Scouting

A. None
B. One
C. Two
D. Three

56. How many daily or weekly newspapers does the family regularly get at home (by subscription or purchased regularly)?

A. None
B. One
C. Two
D. Three
E. Four or more

Items 57 - 60. How many of the follow articles are in the home?

57. Automatic washer, automatic clothes dryer, electric dishwasher, electric or gas refrigerator, vacuum cleaner, home food freezer (separate from refrigerator)

62. How many electrically operated power tools (saw, drill, sander, etc.) are in the home?

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

63. How many cars, station wagons, or pickup trucks does the family own?

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

64. What year model is the family's newest car or station wagon?

A. 1967 or older
B. 1968 or 1969
C. 1970 or 1971
D. 1972 or 1973
E. 1974 or 1975
F. Family does not have a car or station wagon.

65. Which one of the following comes closest to describing the work of the father (or the male head of the household)? Mark only one answer. If he works on more than one job, mark the one on which he spends most of his time. If he is now out of work, or if he is retired, mark the one that he did last.

A. Farm or ranch worker
B. Farm or ranch foreman
C. Farm or ranch owner and/or manager
D. Workman or laborer - such as factory or mine worker, fisherman, filling station attendant, etc.
E. Private household worker - such as a servant, butler, etc.
F. Protective worker - such as a policeman, detective, sheriff, fireman
G. Service worker - such as barber, beautician, waiter, etc.

A. None
B. One
C. Two
D. Three
E. Four
F. Five or six

58. One or more telephones, television sets, radios, record players (not stereos)

A. None
B. One
C. Two
D. Three
E. Four

59. Musical instruments, hi-fi or stereophonic set, classical records, art equipment, photo developing equipment

A. None
B. One
C. Two
D. Three
E. Four

60. Tennis racket, golf clubs, hunting equipment, skis, fishing equipment

A. None
B. One
C. Two
D. Three
E. Four
F. Five

61. How many hand tools (saw, pliers, wire cutters, hammer, wrench, drill, screwdriver, crow bar, etc.) are in the home?

A. Five or less
B. Six to ten
C. Eleven to fifteen
D. Sixteen to twenty
E. Twenty to twenty-five
F. Twenty-six or more

H. Semi-skilled worker - such as factory machine operator, bus or cab driver, meat cutter, etc.
I. Skilled worker or foreman - such as a baker, carpenter, electrician, enlisted man in the armed forces, mechanic, plumber, plasterer, tailor, foreman in a factory or mine, etc.
J. Clerical worker - such as a bank teller, bookkeeper, sales clerk, office clerk, mail carrier, messenger, etc.
K. Salesman - such as real estate or insurance salesman, factory representative, etc.
L. Manager - such as sales manager, store manager, office manager, business manager, factory supervisor, etc.
M. Official - such as manufacturer, officer in a large company, banker, government official or inspector, etc.
N. Proprietor or owner - such as owner of a small business, wholesaler, retailer, contractor, restaurant owner, etc.
O. Professional - such as an actor, accountant, artist, clergyman, dentist, engineer, lawyer, librarian, scientist, etc.
P. Technical - such as draftsman, surveyor, medical and dental technician, etc.

66. If the father (or male head of the household) has a professional or technical occupation (that is, if you checked O or P in the preceeding question), answer this question. If the father does not have a professional or technical occupation, mark A on the answer sheet and go on to the next question. Which <u>one</u> of the following professional or technical occupations comes <u>closest</u> to describing the father's occupation?

A. The father has an occupation other than professional or technical occupation
B. Accountant or auditor
C. Actor, musician, entertainer
D. Architect
E. Armed forces officer
F. Artist, designer, sculptor
G. Biological scientist
H. Chemist
I. College administrator
J. Clergyman

K. Dentist
L. Draftsman
M. Economist
N. Editor or reporter
O. Elected or appointed official-mayor, senator, judge, etc.
P. Engineer-aeronautical, civil, chemical, electrical, mechanical, etc.
Q. Lawyer (not elected or appointed official)
R. Librarian
S. Mathematician
T. Nurse
U. Optometrist, osteopath, chiropractor, pharmacist
V. Physician or surgeon
W. Physicist
X. Psychologist
Y. Sociologist
Z. Social or welfare worker
AA. Statistician
BB. Surveyor
CC. Teacher, elementary school
DD. Teacher, high school
EE. Technician, medical or dental
FF. Veterinarian
GG. A technical occupation not listed above.
HH. A scientific occupation not listed above.
II. A professional occupation not listed above.

67. Which one of the following comes closest to describing the work of the mother (or the female head of the household)? Mark only one answer. If she does housework in addition to outside work, count only the outside work. If she works on more than one job, mark the most important one. If she usually works, but is out of work now, mark the one that she did last.

A. Housekeeping only - she has not worked for pay within the last three years
B. Farm or ranch owner and/or manager
C. Farm or ranch worker
D. Worker or laborer - such as charwoman, laundry worker, etc.
E. Private household worker - such as housekeeper, maid, laundress, etc.
F. Protective worker - such as policewoman, etc.

G. Service worker - such a beautician, waitress, etc.
H. Semi-skilled worker - such as factory machine operator, cab driver, etc.
I. Skilled worker or foreman - such as baker, inspector, etc.
J. Clerical worker - such as bookkeeper, secretary, typist, sales clerk, store clerk, etc.
K. Sales - such as real estate, life insurance, etc.
L. Manager - such as sales manager, store manager, office manager, business manager, factory supervisor, etc.
M. Official - such as manufacturer, officer in a large company, banker, government official or inspector, etc.
N. Proprietor or owner - such as owner or a small business, wholesaler, retailer, restaurant owner, etc.
O. Professional - such as actress, accountant, artist, dentist, physician, engineer, lawyer, librarian, scientist, etc.
P. Technical - such as draftsman, medical or dental technician, etc.

68. If the mother (or female head of the household) has a professional or technical occupation (that is, if you marked O or P on the preceeding question), answer this question. If the mother does not have a professional or technical occupation, mark A on the answer sheet and go on to the next question. Which <u>one</u> of the following professional or technical occupations comes <u>closest</u> to describing the mother's occupation?

A. The mother has an occupation other than professional or technical
B. Accountant or auditor
C. Actress, musician, entertainer
D. Architect
E. Artist, designer, sculptress
F. Biological scientist
G. Chemist
H. College administrator
I. Clergywoman
J. Dentist
K. Draftsman
L. Economist
M. Editor or Reporter

N. Elected or appointed official - mayor, senator, judge, etc.
O. Engineer - aeronautical, civil, chemical, electrical, mechanical, etc.
P. Lawyer (not an elected or appointed official)
Q. Librarian
R. Mathematician
S. Nurse
T. Optometrist, osteopath, chiropractor, pharmacist
U. Physician or surgeon
V. Physicist
W. Psychologist
X. Sociologist
Y. Social or welfare worker
Z. Statistician
AA. Surveyor
BB. Teacher, elementary school
CC. Teacher, high school
DD. Technician, medical or dental
EE. Veterinarian
FF. A technical occupation not listed above.
GG. A scientific occupation not listed above.
HH. A professional occupation not listed above.

69. For whom does the father work? Mark only one answer. If he works on more than one job, mark the most important one. If he is now out of work, or if he is retired, mark the one that was his last employer.

A. A large company or industry
B. A small local company or industry
C. A retail business
D. An industrial employer
E. He is self-employed
F. The local or community government
G. A school or college
H. Military Services
I. The state or national government (except military services or schools)

70. For whom does the mother work? Mark only one answer. If she works on more than one job, mark the most important one. If she is now out of work, mark the one that was her last employer.

A. A large company or industry
B. A small local company or industry
C. A retail business

D. An individual employer
E. The local or community government
F. A school or college
G. The state or national government (except schools)
H. She is self-employed
I. Housewife only; she has not worked for pay in the last three years.

71. How old is the father?

A. 24 or younger
B. 25 - 29
C. 30 - 34
D. 35 - 39
E. 40 - 44
F. 45 - 49
G. 50 or older

72. How old is the mother?

A. 24 or younger
B. 25 - 29
C. 30 - 34
D. 35 - 39
E. 40 - 44
F. 45 - 49
G. 50 or older

73. In which branch of the military service did the father serve? If he served in more than one branch, mark the one in which he served the longest time.

A. Army
B. Navy
C. Air Force
D. Marine Corps
E. Coast Guard
F. He served in the Merchant Marines instead of the armed forces
G. He did not serve.

74. Mark the one answer indicating the highest level of education the father reached.

A. None, or some grade school
B. Completed grade school
C. Some high school, but did not graduate

D. Graduated from high school
E. Vocational or business school after high school
F. Some junior or regular college, but did not graduate
G. Graduated from a regular 4-year college
H. Master's degree
I. Some work towards doctorate or professional degree
J. Completed doctorate or professional degree

75. Mark the one answer indicating the highest level of education the mother reached.

A. None, or some grade school
B. Completed grade school
C. Some high school, but did not graduate
D. Graduated from high school
E. Vocational or business school after high school
F. Some junior or regular college, but did not graduate
G. Graduated from a regular 4-year college
H. Master's degree
I. Some work towards doctorate or professional degree
J. Completed doctorate or professional degree

76. Who are the heads of the house?

A. Mother and father
B. Mother only
C. Father only
D. Spends some time with father, some time with mother
E. Mother and stepfather
F. Father and stepmother
G. Grandparents, aunt, uncle, or cousins
H. Brother or sister
I. Foster parents (not relatives)
J. Someone not listed above

77. What is the total number of living children in the family? Include stepchildren and those not now living at home.

A. One
B. Two
C. Three
D. Four
E. Five
F. Six
G. Seven
H. Eight
I. Nine
J. Ten
K. Eleven
L. Twelve or more

78. How many male children in the family are older than the child about whom this information is being gathered?

A. One
B. Two
C. Three
D. Four
E. Five
F. Six
G. Seven
H. Eight
I. Nine
J. Ten
K. Eleven or more

79. How many female children in the family are older than the child about whom this information is being gathered?

A. One
B. Two
C. Three
D. Four
E. Five
F. Six
G. Seven
H. Eight
I. Nine
J. Ten
K. Eleven or more

80. Where did the child live just before moving to this community?

A. He/she has lived here all of his/her life.
B. New England States (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut)
C. Middle Atlantic States (New York, New Jersey, Pennsylvania)
D. South Atlantic States (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida)
E. East North Central States (Ohio, Indiana, Illinois, Michigan, Wisconsin)
F. West North Central States (Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas)
G. East South Central States (Kentucky, Tennessee, Alabama, Mississippi)
H. West South Central States (Arkansas, Louisiana, Oklahoma, Texas)
I. Mountain States (Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada)
J. Pacific States (Washington, Oregon, California, Hawaii, Alaska)
K. United States Possessions (Puerto Rico, Guam, etc.)
L. In a foreign country

81. How many rooms are in the home, not including bathrooms? (Count all other rooms: bedrooms, kitchen, living room, recreation room, enclosed porch, etc.)

A. One
B. Two
C. Three
D. Four
E. Five
F. Six
G. Seven or eight
H. Nine or ten
I. Eleven or twelve
J. Thirteen or fourteen
K. Fifteen or sixteen
L. Seventeen or more

82. How many bathrooms, including half baths, are in the home?

A. None
B. One
C. Two
D. Three
E. Four or more

83. How many people live in the home? Include all children, parents, relatives, borders, etc.

A. Two
B. Three
C. Four
D. Five
E. Six
F. Seven
G. Eight
H. Nine
I. Ten
J. Eleven
K. Twelve
L. Thirteen or more

84. How many different times has your child been sick in bed (as much as a day) in the past year?

A. None
B. One or two
C. Three or four
D. Five or six
E. Seven or eight
F. Nine or more

85. What is the longest period of time that your child has ever been in bed for sickness or an accident?

A. Up to one week
B. Up to one month
C. Up to three months
D. Up to six months
E. Up to one year
F. More than one year

86. Which one of the following best describes your child's usual health in the last three years?

A. Excellent
B. Very good
C. Good
D. Average
E. Poor
F. Very poor

87. How many times has your child been treated by a doctor for illness, injury, or an accident in the past 6 months?

A. None
B. One
C. Two
D. Three
E. Four
F. Five or more

88. On the average, about how many hours does your child sleep each night?

A. About six or less
B. About seven
C. About eight
D. About nine
E. About ten
F. About eleven or more

89. How late does your child usually stay up on a week night?

A. 8 P.M. or earlier
B. 9 P.M.
C. 9:30 P.M.
D. 10:00 P.M.
E. 10:30 P.M.
F. 11:00 P.M. or later

90. Does your child wear glasses all the time?

A. No
B. Yes

91. Is your child hard of hearing?

A. No
B. Yes

92. Is your child's speech readily understood?

A. No
B. Yes

93. How does your child spend the majority of his/her time when he/she is not in school?

A. Plays outside (weather permitting)
B. Watches T.V.
C. Reads
D. Plays indoors

94. Who does your child spend most of his/her play time with?

A. He/she plays by himself/herself
B. His/her brothers/sisters
C. Children in the neighborhood
D. School friends who do not live in the immediate neighborhood (more than 5 blocks away)

95. When your child plays with other children, where do they usually play?

A. At your house, either inside or outside
B. At another child's house, either inside or outside
C. At a playground
D. At a community center

96. How many of the following extracurricular activities does your child participate in? Girl Scouts, Camp-fire Girls, Cub Scouts, dance lessons, music lessons, art lessons, speech lessons, sports team (Little League, gymnastics, school football, church athletic team, etc.)

A. None
B. One
C. Two
D. Three
E. Four
F. Five
G. Six

97. Who does your child share a bedroom with?

A. He/she has their own room.
B. He/she shares a room with one or more brothers.
C. He/she shares a room with one or more sisters.
D. He/she shares a room with one or more brothers and one or more sisters.
E. He/she shares a room with his/her parents (either one or both parents)
F. He/she shares a room with someone else.

98. Does the child receive a weekly or monthly allowance that he/she does not have to do any work for in order to receive it and that he/she may spend as he/she wishes?

A. No
B. Yes

99. Is the child able to earn money around the house by doing household chores?

A. No
B. Yes

100. Is the child expected to do certain household chores such as make his/her bed, clean up his/her room, wash the dishes, empty the trash, etc.?

A. No, the child does not have to do any household chores.
B. Yes, the child has to do one chore.
C. Yes, the child has to do two chores.
D. Yes, the child has to do three chores.
E. Yes, the child has to do four chores.
F. Yes, the child has to do five or more chores.

101. Did your child go to kindergarten?

A. No, my child did not go to kindergarten.
B. Yes, my child went to a state-supported kindergarten. (Financed by state taxes and all children in the state are expected to go.)
C. Yes, my child went to a Head Start or Title I kindergarten.
D. Yes, my child went to a church sponsored kindergarten.
E. Yes, my child went to a private kindergarten.

APPENDIX B

DICHOTOMOUS ITEMS AND THEIR ORIGINAL ITEM NUMBERS

1. Does the father, a male guardian, or a male relative provide the main source of support for the family?

   A. Yes
   B. No

12. Was the father in any of the military services?

   A. Yes
   B. No

42. Does the family get most of its income from professional fees, business profits (including profits from a farm), or commissions or royalties?

   A. Yes
   B. No

   Does the family get most of its income from a fixed salary (paid on a weekly, monthly or yearly basis)?

   A. Yes
   B. No

   Does the family get most of its income from wages (paid on an hourly or daily basis depending on the number of hours worked)?

   A. Yes
   B. No

69. Does the father work for a large company or industry, a retail business, or an industrial employer?

   A. Yes
   B. No

Does the father work for a small local company or industry?

A. Yes
B. No

Is the father self-employed?

A. Yes
B. No

Does the father work for the local or community government, a school or college, military services, or the state or national government (except military services or schools)?

A. Yes
B. No

70. Does the mother work for a large company or industry or a retail business?

A. Yes
B. No

Does the mother work for a small local company or industry?

A. Yes
B. No

Does the mother work for an individual employer or is she self-employed?

A. Yes
B. No

Does the mother work for the local or community government, a school or college, or the state or national government (except schools)?

A. Yes
B. No

76. Are the mother and father heads of the house?

A. Yes
B. No

Is only the mother head of the house?

A. Yes
B. No

Are the mother and stepfather heads of the house?

A. Yes
B. No

Are the grandparents, aunt, uncle or cousins heads of the house?

A. Yes
B. No

93. Does your child spend the majority of his/her time when he/she is not in school playing outdoor (weather permitting)?

A. Yes
B. No

95. When your child plays with other children, do they usually play at your house, either inside or outside?

A. Yes
B. No

96. Does your child share a bedroom with someone else?

A. Yes
B. No

101. Did your child go to kindergarten?

A. Yes
B. No

Did your child go to a state supported, church sponsored or private kindergarten?

A. Yes
B. No

Did your child go to a Head Start or Title I kindergarten?

A. Yes
B. No

APPENDIX C

ITEMS WITH THE HIGHEST FACTOR LOADINGS IN THE FIRST FACTOR ANALYSIS[a]

Variable	Factor I	Factor II
1. Source of support	0.76	-0.22
2. Large appliances	0.80	-0.06
3. Sports equipment	0.76	0.07
4. Hand tools	0.73	-0.17
5. Number of cars	0.70	-0.14
6. Number of children	-0.26	0.81
7. Number of older males	-0.04	0.63
8. Number of older females	-0.11	0.82

[a]Two factors, accounting for 43% of the variance, were rotated.

APPENDIX D

ITEMS WITH THE HIGHEST FACTOR LOADINGS IN THE SECOND FACTOR ANALYSIS[a]

Variable	Factor I	Factor II	Factor III
1. Source of support	0.77	-0.16	-0.18
2. Value of home	0.75	0.08	0.10
3. Total income	0.80	-0.17	0.03
4. Fixed salary	0.04	0.07	0.97
5. Wages	-0.20	0.07	-0.75
6. Large appliances	0.80	-0.08	0.08
7. Number of children	-0.22	0.92	0.07
8. Number of older males	0.01	0.80	0.03
9. Number of older females	-0.12	0.64	0.13
10. Number of people	-0.13	0.87	-0.04

[a]Three factors, accounting for 48% of the variance, were rotated.

APPENDIX E

ITEMS WITH THE HIGHEST FACTOR LOADINGS IN THE THIRD FACTOR ANALYSIS[a]

Variable	Factor I	Factor II	Factor III	Factor IV
1. Source of support	0.03	0.72	-0.07	0.09
2. Value of home	-0.05	0.81	0.16	-0.01
3. Total income	0.18	0.79	0.07	0.16
4. Large appliances	0.07	0.78	0.12	0.07
5. Fixed salary	-0.03	-0.01	0.89	0.16
6. Wages	-0.05	-0.17	-0.88	-0.01
7. Number of children	-0.88	-0.24	0.03	0.23
8. Number of older males	-0.75	-0.08	0.08	0.09
9. Number of older females	-0.63	-0.09	0.03	0.23
10. Number of people	-0.80	-0.15	-0.05	0.19
11. Times sick	-0.35	0.20	-0.13	0.72
12. Health	-0.13	0.12	0.02	0.72
13. Visits to doctor	0.06	0.09	0.01	0.69

[a]Four factors, accounting for 48% of the variance, were rotated.

APPENDIX F

ITEMS WITH THE HIGHEST FACTOR LOADINGS IN THE FOURTH FACTOR ANALYSIS[a]

Variable	Factor I	Factor II	Factor III
1. Source of support	0.81	-0.12	-0.11
2. Father's supervision	0.75	-0.10	-0.12
3. Father's responsibilities	0.69	-0.03	-0.18
4. Value of home	0.70	0.02	0.02
5. Income	0.81	0.18	-0.08
6. Large appliances	0.74	0.02	-0.07
7. Father's job	0.83	-0.09	-0.12
8. Mother's work	-0.05	0.81	-0.10
9. Length mother's work	-0.13	0.78	-0.02
10. Mother's supervision	-0.04	0.80	0.07
11. Mother's responsibilities	0.07	0.83	-0.07
12. Number of children	-0.19	-0.29	0.81
13. Number of older males	-0.04	-0.30	0.62
14. Number of older females	-0.11	-0.06	0.68
15. Number of people	-0.10	-0.34	0.70
16. Sickness	-0.04	0.07	0.66

[a]Three factors, accounting for 43% of the variance, were rotated.

APPENDIX G

ITEMS WITH THE HIGHEST FACTOR LOADINGS IN THE FIFTH FACTOR ANALYSIS[a]

Variable	Factor I	Factor II	Factor III
1. Source of support	0.85	0.11	-0.10
2. Father's supervision	0.72	0.12	-0.08
3. Father's responsibilities	0.70	0.06	-0.01
4. Father's church activity	0.74	-0.05	0.01
5. Father's PTA activity	0.74	0.05	0.25
6. Income	0.76	0.13	0.23
7. Father's job	0.79	0.06	-0.07
8. Father's education	0.84	0.14	0.12
9. Number of children	-0.16	-0.91	-0.17
10. Number of older males	-0.01	-0.75	-0.21
11. Number of older females	-0.13	-0.73	0.07
12. Number of people	-0.07	-0.76	-0.23
13. Mother's type of work	-0.08	0.16	0.75
14. Mother's length of work	-0.13	0.06	0.75
15. Mother's supervision	-0.10	0.00	0.81
16. Mother's responsibilities	-0.05	0.16	0.77

[a]Three factors, accounting for 48% of the variance, were rotated.